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Advanced Photon Source Upgrade (APS-U)—Extreme Conditions

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Materials subjected to the extremes of pressure, temperature, magnetic fields, or electric fields can display a host of novel electronic and structural properties. Understanding how these new phases of matter are formed can frequently provide a path towards engineering new functionalities into materials at ambient conditions. Due to its high brilliance and penetrating power, synchrotron radiation provides an ideal probe for materials at extreme of phase space, since such measurements generally require small sample volumes. This poster will describe proposed beamline upgrades at the APS seeking to enhance the capabilities for studying materials under extreme environments.